Effect of various coatings on the chemical changes of different pineapple cultivars (N36 and Gandul) at low temperature storage

ABSTRACT

The chemical changes in N36 and Gandul pineapples stored at 10 ± 1 °C; 85ï 88% RH and the effects of various surface coatings (palm oil, liquid paraffin, Semperfresh) were examined by monitoring fruit total soluble solids (TSS), titratable acidity (TA), sugar-acid ratios (TSS:TA), pH and individual sugars (glucose, fructose and sucrose). Palm oil was effective in reducing ascorbic acid loses of N36 pineapple. All surface treatments significantly ($p < 0.05$) reduced the TSS value in all pineapple cultivars except for N36 pineapple treated with palm oil. In N36 pineapple, the palm oil caused an increase in the TSS during storage. Sugar-acid ratio was significantly ($p < 0.05$) increased by palm oil as observed in all pineapples, however, sample treated with Semperfresh and paraffin caused an increase in the sugar-acid ratio as observed in Gandul and N36 pineapples, respectively. Titratable acidity (TA) was significantly ($p < 0.05$) reduced by all surface treatments in all pineapples except for paraffin treatment on Gandul pineapple. Paraffin treatment retained ascorbic acid in all pineapples during storage. However the palm oil coating only retained ascorbic acid on N36 pineapple. Paraffin coating significantly ($p < 0.05$) reduced fructose and sucrose in N36 pineapple, but significantly ($p < 0.05$) increased the fructose content in Gandul pineapple. Fructose, sucrose and total sugar in Gandul pineapple were significantly ($p < 0.05$) reduced by palm oil and Semperfresh treatments.

Keyword: Fresh pineapple; Coatings; Palm oil; Paraffin; Semperfresh; N36; Gandul; Storage